

NORTH AMERICAN PREDACEOUS BEETLES OF THE
TRIBE TILLINI IN THE UNITED STATES NATIONAL
MUSEUM.

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Through the courtesy of Dr. L. O. Howard and Mr. E. A. Schwarz the beetles belonging to the tribe Tillini, of family Cleridae, have been sent to me for study.

Several new species have been found and descriptions of these, as well as records of all the known species contained in the collection, are given in the following catalogue, in which the genera and species (as far as possible) are arranged in what I conceive to be the natural sequence. To make the paper more complete I have included records and have added descriptions of certain new forms from material in my collection. The greater part of this paper is, however, based on the collection of the United States National Museum and all of the material belonging to that collection, which was loaned to me, is catalogued. At the end of the account of each species the number of specimens in the Museum collection is stated.

Family CLERIDAE.

Subfamily CLERINAE.

Tribe TILLINI.

Genus MONOPHYLLA Spinola.

MONOPHYLLA TERMINATA Say.

Crescent City, Florida, April, May, bred from bamboo (Hubbard and Schwarz); Herndon, Virginia (Hubbard and Schwarz); Cabin John, Maryland, May 23 (P. R. Myers); Plummer Island, Maryland, July 20 (Barber and Schwarz); Washington, District of Columbia, June 26, July 5 (Hubbard and Schwarz); Pennsylvania (C. V. Riley); Franklinville, Pennsylvania (Hubbard and Schwarz); Louisville, Kentucky (H. Soltau); Iowa, June (Hoffmeister); Missouri, July 10, (J. G. Barlow, C. V. Riley); Onaga, Kansas (Crevecœur); Wades, Texas, May 21 (E. A. Schwarz); Victoria, Texas, April 8 (E. A. Schwarz); San Diego, Texas (E. A. Schwarz); Dimmit County, Texas (F. G. Schaupp); Texas (J. B. Smith, Belfrage). Seventeen males; eighteen females.

MONOPHYLLA PALLIPES Schaeffer.

Brownsville, Texas, June 4, 9 (Schwarz, Townsend); 2 males; 3 females.

MONOPHYLLA CALIFORNICA Fall.

Los Angeles County, California (A. Koebele, D. W. Coquillett); Santa Cruz Mountains, California (A. Koebele); Panamint Valley, California, April (A. Koebele); Los Gatos, California (Hubbard and Schwarz); Santa Rosa, Lower California, July (G. Beyer); Catalina Springs, Arizona, April 11, on *Prosopis juliflora* (Hubbard and Schwarz); Hot Springs, Arizona, December 5, 1901, reared from dead branch of *Prosopis juliflora* (Schwarz and Barber). Seven males; six females.

Genus TILLUS Olivier.

TILLUS COLLARIS Spinola.

Langdale, Chambers County, Alabama (H. H. Smith); Covington, Louisiana, June 1 (H. Soltau). Two? females.

Genus CALLOTILLUS Wolcott.

CALLOTILLUS ELEGANS Erichson.

Point Isabel, Texas, August 21; Brownsville, Texas, June 5, 8 (E. A. Schwarz); San Diego, Texas, April 29, May 7 (E. A. Schwarz); Nueces, Texas, April 28 (C. L. Marlatt); Santa Rosa, Lower California, July 1 (G. Beyer). Four males; eight females.

CALLOTILLUS VAFER, new species.

Moderately elongate, shining, rather sparsely clothed with long erect white and black pubescence, testaceous, abdomen and apical half of elytra black, a slightly oblique median fascia interrupted at suture, white. Head with front finely, sparsely punctate, very feebly, transversely wrinkled; occiput and region of eyes with a few rather coarse scattered punctures. Prothorax nearly one-half longer than wide, strongly convex both laterally and transversely; sides parallel, suddenly strongly constricted at basal two-fifths, thence slightly convergent to base; subapical transverse impressed line evident, especially at flanks; surface very finely, sparsely punctate. Elytra wider at base than thorax; sides straight, gradually, feebly divergent; apices conjointly rounded; surface with fine, distant, feebly impressed, seriatly arranged punctures, becoming obsolete toward the apices; the basal region smooth, almost impunctate. Metasternum sparsely, finely punctate. Abdomen very shining, finely, very sparsely punctate, the punctures dense at middle of third and fourth ventral segments, more broadly so on the latter, from each of the punctures a single, rather short recumbent white hair arises. Length, 3.2 mm.

Type locality.—Fort Yuma, opposite Yuma, Arizona.

Type.—Cat. No. 23119, U.S.N.M.

Described from one female reared in May, 1897, by H. G. Hubbard.

Similar in form to *elegans* Erichson, to which it is nearest related. The form is, however, a little more elongate, the prothorax proportionately longer and more strongly compressed at base, the punctuation throughout more sparse and fine, the median elytral fascia is but very slightly oblique, and finally the color is quite different.

The 15 specimens of *elegans* that I have examined have, without exception, the prothorax quite coarsely and densely punctate and show no tendency to vary in the direction of the species above described.

Genus LECONTELLA Wolcott and Chapin.

LECONTELLA CANCELLATA LeConte.

Texas (Belfrage, Schaupp?); Brownsville, Texas (C. H. T. Townsend); Pennsylvania (Hubbard and Schwarz); Plummer Island, Maryland (R. P. Currie). Fifteen females.

Genus CYMATODERA Gray.

CYMATODERA PUNCTICOLLIS Bland.

Oracle, Arizona, July 4, 5, 8, 11, 12, 18, 1898 (Hubbard and Schwarz); Tucson, Arizona, July 21 (Hubbard and Schwarz); Hot Springs, Arizona, June 26, 1901 (Schwarz and Barber). Four males; three females. (Male sexual characters, plate 43, fig. 1.)

CYMATODERA AEGRA, new species.

Moderately robust, feebly shining, moderately clothed with long recumbent and erect pale yellowish hairs, reddish brown, occiput of head with large black maculation, elytra piceous behind the base with a narrow angulate median fascia pale yellow. Head very sparsely, moderately finely punctuate; eyes prominent; antennae reaching to about basal fourth of elytra, joints two, three and four short, subequal, each shorter than any of the following joints, outer joints gradually incrassate apically, not at all triangular. Prothorax twice as long as wide at base, very feebly constricted at apical third, moderately compressed at basal third; surface finely, sparsely punctuate; antescutellar impression very feeble, scarcely discernable. Elytra twice as wide as thorax at base; humeri distinct, sides parallel to apical fourth; apices conjointly rounded; rows of punctures coarse, deep, extending nearly to apex toward which the punctures are but slightly smaller and feebly impressed, the punctures separated by at least their own diameter; intervals narrower than the punctures, finely, sparsely, irregularly punctate. Body beneath sparsely pubescent; metasternum rather finely, remotely, feebly punctate, the abdomen a little more densely. Legs more densely pubescent than the venter. Length, 4–5.5 mm.

Male.—Fifth ventral segment broadly, feebly, arcuately emarginate; the sixth shorter but broader at base than the last dorsal, sinuately truncate at apex; last dorsal truncate, very feebly emarginate at middle. (Plate 43, fig. 2.)

Female.—Fifth ventral truncate; sixth ventral large, as long as but narrower at base than last dorsal, elongate-oval at tip; last dorsal elongate-oval at tip. (Plate 43, fig. 3.)

Type locality.—Oracle, Arizona.

Type, allotype, and one paratype.—Cat. No. 23120, U.S.N.M.

Described from three specimens, the type and allotype from Oracle, Arizona, July 11 and 18, 1898 (Hubbard and Schwarz), and a female labeled "Arizona, Morrison," from the Hubbard and Schwarz collection.

Related to *delicatula* Fall, from which *aegra* may be known by the much larger size, the longer rows of elytral punctures, the narrower intervals, the elytral fascia median, narrow, strongly so toward the suture where it is interrupted, the prothorax more feebly constricted at apical third and the different sexual characters. Readily separated from *puncticollis*, to which it bears some resemblance, by the structure of the antennae and the elytral punctures coarser, deeper, and more remote.

CYMATODERA DELICATULA Fall.

Hot Springs, Arizona, June 25 (Schwarz and Barber); two females.

CYMATODERA TURBATA Horn.

Dimmit County, Texas (F. G. Schaupp); Alice, Texas, June 15, 1904 (H. S. Barber); Texas (J. B. Smith); Hot Springs, Arizona, June 22, 26, 1901 (Schwarz and Barber). Four males; eleven females.

Doctor Horn in the original description states "I am unable to detect any sexual differences in the specimens before me, the last abdominal segments of the dorsal and ventral aspect being oval at tip." Both sexes are before me and, as Doctor Horn evidently had only the female sex, I give the characters for both sexes.

Male.—Fifth ventral segment broadly, feebly arcuately emarginate; sixth ventral short, as broad at base but elsewhere much narrower and slightly shorter than last dorsal, subtruncate at apex; last dorsal semicircular, truncate at apex. (Plate 43, fig. 4.)

Female.—Fifth ventral segment truncate at apex, sixth ventral smaller than last dorsal, semicircular; last dorsal semicircular. (Plate 43, fig. 5.)

CYMATODERA PALLIDA Schaeffer.

Chiricahua Mountains (Cave Creek Canon), Arizona, July 3, 1897 (H. G. Hubbard). (Male sexual characters, plate 43, fig. 6.)

CYMATODERA SUBSIMILLIS Wolcott.

Oracle, Arizona, July 11, 1898 (Hubbard and Schwarz).

This species was based upon the female only. The specimen above mentioned being a male, the opportunity is afforded of giving the abdominal sexual characters of that sex.

Male.—Fifth ventral segment broadly, rather feebly emarginate; sixth ventral segment small, transverse, broader at base than last dorsal, broadly but distinctly emarginate; last dorsal much longer than last ventral, feebly emarginate at apex. (Plate 43, fig. 7.)

CYMATODERA MITIS, new species.

Slender, shining, sparsely pubescent, the intervals with long erect hairs, pale reddish brown, body beneath paler, elytra with a narrow, somewhat irregular ante-median fascia narrowly interrupted at the suture pale yellow. Head very finely and sparsely punctate, more densely on occiput; eyes moderately prominent; antennae extending to basal fourth of elytra, joints two, three and four subequal, each distinctly shorter than any of the following joints, joints six to ten moderately serrate, joint eleven one-half longer than the tenth, distinctly compressed. Prothorax three-fourths longer than wide, distinctly constricted at apical third, strongly compressed at basal fourth, surface minutely and remotely punctate, the punctures slightly coarser and a little closer on the flanks; ante-scutellar impression very feeble. Elytra twice as wide as thorax at base; humeri distinct; sides feebly divergent; apices conjointly rounded; rows of punctures moderately coarse, gradually becoming feebly impressed behind the fascia, the punctures separated by about half their own diameter; intervals near suture wider than the punctures, slightly narrower toward the sides, finely, sparsely and irregularly punctulate. Body beneath sparsely pubescent; metasternum minutely, remotely punctate; abdomen moderately coarsely, sparsely punctate. Legs sparsely clothed with moderately long pale hairs. Length, 5.75 mm.

Male.—Unknown.

Female.—Fifth ventral segment feebly sinuate; sixth short, subtruncate, much smaller than last dorsal; last dorsal semicircular. (Plate 43, fig. 8.)

Type locality.—Williams, Arizona.

Type.—Cat. No. 23121, U.S.N.M.

Described from one female, collected June 2, 1901, by Schwarz and Barber.

This species is allied to *subsimilis* Wolcott, and *pallida* Schaeffer, from both of which the posteriorly broader elytra, the color and markings, and abdominal sexual characters will readily separate it.

CYMATODERA UNIFORMIS Schaeffer.

Williams, Arizona, reared from *Cowania mexicana* in 1901 (Schwarz and Barber).

The female of this species was unknown to Mr. Schaeffer at the time of his making the species known.

Female.—Fifth ventral segment truncate; sixth ventral smaller than last dorsal, semicircular; last dorsal semicircular. (Plate 43, fig. 9.) One female and one with abdomen destroyed.

CYMATODERA PUBESCENS Wolcott.

Texas (Belfrage).

The abdominal characters of the female of this species have not been made known. Three specimens of that sex are now before me, enabling these characters to be recorded.

Female.—Fifth ventral segment truncate at apex; sixth short, rounded, smaller than the last dorsal; last dorsal oval at tip. (Plate 43, fig. 10). Three females.

CYMATODERA SCHWARZI, new species.

Elongate, shining, sparsely pubescent, intervals with short erect hairs, piceous brown; labrum, four basal joints of antennae, palpi, an antemedian fascia which reaches neither suture nor side margin, under surface of head, legs and entire underside of body pale yellowish; outer joints of antennae varying from pale yellowish brown to piceous brown. Head finely, sparsely, punctate, a little closer and coarser on occiput; front with an oblique impression each side; eyes prominent; antennae slightly longer than head and thorax, joints two, three, and four small, third joint slightly longer than the second, fourth joint slightly shorter than the second, each much shorter than joint five or any of the following joints. Prothorax one-third longer than wide, moderately constricted at apical third, strongly compressed at basal third; surface very finely transversely rugulose, moderately finely and sparsely punctate; ante-scutellar impression small and feebly impressed. Elytra twice as wide as thorax at base; humeri distinct; sides moderately divergent posteriorly; apices conjointly rounded; punctures rather coarse and closely placed in basal half gradually becoming finer, more remote and less impressed terminating at apical fourth; apex irregularly, scarcely perceptibly punctate; intervals very slightly convex, with a single row of sparse, fine punctures, near suture twice as wide as the punctures, wider toward the sides. Body beneath sparsely pubescent; metasternum smooth, impunctate, near posterior margin a few minute scattered punctures, sides with scattered slightly coarser punctures; abdomen moderately coarsely very sparsely punctate. Legs sparsely clothed with moderately long hairs. Length, 4.5–5.3 mm.

Male.—Fifth ventral segment broadly not deeply emarginate; sixth broadly emarginate, the angles rounded; last dorsal broader and longer than last ventral, truncate at apex. (Plate 43, fig. 11.).

Female.—Fifth ventral segment truncate at tip; sixth semicircular; last dorsal broader and longer than last ventral, the sides sinuately narrowing to the very feebly, broadly emarginate apex. (Plate 43, fig. 12.)

Type locality.—Madera Canon, Santa Rita Mountains, Arizona.

Type, allotype, and paratype.—Cat. No. 23122, U.S.N.M.

Described from eleven specimens, seven males and four females, all of which are from the Santa Rita Mountains, Arizona, May 27, 29, 31, 1898 (Hubbard and Schwarz).

A very distinct species; differs from *pubescens* Wolcott, to which it is nearest related; by the proportionately shorter prothorax, the wider elytra at base, the finer sculpture of elytra, the finer punctuation of the metasternum, color, and abdominal sexual characters of both sexes.

Named in honor of Mr. E. A. Schwarz.

CYMATODERA LONGICORNIS LeConte.

Chiricahua Mountains, Arizona, June 11, 1897 (H. G. Hubbard), (Male sexual characters, plate 43, fig. 13.) One male.

CYMATODERA TOROSA Wolcott.

Fort Grant, Arizona, July 19, 1897 (H. G. Hubbard); Williams, Arizona, July 24, 1901 (Schwarz and Barber); Arizona (Morrison). Four males; one with defective abdomen.

CYMATODERA LATEFASCIA Schaeffer.

Fort Grant, Arizona, July 12 to 21, 1897 (H. G. Hubbard); Oracle, Arizona, July 11, 1898 (Hubbard and Schwarz); Hot Springs, Arizona, June 21, 1901 (Schwarz and Barber); Chiricahua Mountains, Arizona, July 1, 4, 1897 (H. G. Hubbard); Tuba, Arizona (plate 43, figs. 14, 15). Sixteen males; four females.

CYMATODERA USTA LeConte.

Chiricahua Mountains, Arizona, June 20, 1897 (H. G. Hubbard); Sulphur Spring Valley, Arizona, June 27, 1897 (H. G. Hubbard); Arizona (Morrison). Five females.

CYMATODERA MYSTICA, new species.

Robust, pale yellow, head, antennae, thorax, apical third of femora, and basal portion of tibiae piceous; elytra pale yellowish with a broad post-median fascia which scarcely attains the lateral margins and is broadly interrupted at the suture, black, the anterior margin of fascia distinct and but slightly irregular, posteriorly gradually be-

coming paler and leaving the apices a dull testaceous; shining; moderately clothed with whitish pubescence, which is longest on head and prothorax. Head with front moderately coarsely, not very densely, somewhat rugosely punctate, occiput finely punctate and very finely rugulose; eyes moderately prominent; antennae half as long as body, rather stout; joints two and three short, obconical, equal in length, joint three more slender than joint two, together just visibly longer than joint four; joints four to ten elongate, subequal, feebly serrate, joint eleven one-third longer than tenth. Thorax one-half longer than wide at apex, base narrower than apex, subapical constriction feeble, at basal fourth strongly compressed; ante-scutellar impression feeble, an obtuse tubercle each side of impression; surface finely rugulose, distinctly so at middle of disk. Elytra twice as wide at base as thorax at base; humeri distinct; sides straight, feebly divergent to apical fourth, thence arcuate to apex; apices conjointly rounded; disk feebly convex, with rows of coarse punctures in basal half, the punctures abruptly much reduced in size and depth behind the middle and becoming obliterated at apex; intervals nearly flat, near suture subequal in width to punctures, narrower toward the flanks, finely, irregularly punctulate, a fine hair arising from each puncture. Metasternum rather finely, feebly, sparsely punctate, the punctures separated by four or five times their own diameter, a little closer at the middle. Abdomen minutely, very densely punctulate. Length, 5.9–6.2 mm.

Male.—Fifth ventral segment broadly feebly arcuately emarginate; sixth ventral short, broadly rounded, arcuately emarginate at apex; last dorsal much larger than last ventral, sides narrowing to apex, which is broadly sinuate-truncate. (Plate 43, figs. 16, 17.)

Female.—Fifth ventral truncate at apex, a small distinct fovea at middle of apical margin extends onto basal portion of sixth ventral, the latter short, truncate at apex; last dorsal semicircular, larger than last ventral. (Plate 43, figs. 18, 19.)

Type locality.—Springdale, Utah.

Type.—In author's collection, No. 1145; *paratype* in Mr. Warren Knaus' collection.

Described from two specimens sent me by Mr. Warren Knaus. The type, a male, Springdale, Utah, June 16, 1919 (Tom Spaulding); paratype, a female, St. George, Utah, 2,800 feet, May 22–June 12, 1919 (W. Knaus).

Closely allied by antennal structure to *isabellae* Wolcott, of which species at first sight it was thought to be a variety; however, further study revealed too many points of structural difference to permit of this conclusion. The robust form, the presence of an ante-scutellar impression, the proportionately longer thorax, the coarser elytral punctuation, with the abrupt reduction in size of the punctures be-

hind the middle, the narrower elytral intervals, and the sexual characters of the male will serve to distinguish this species from *isabellae* and the allied *usta*.

CYMATODERA SIRPATA Horn.

San Diego, Texas, May 1 to 25, 1895 (E. A. Schwarz); Victoria, Texas, April 8 (E. A. Schwarz). Six males; three females; one defective.

The emargination of the male fifth ventral segment is somewhat variable, sometimes very feeble indeed, again very distinct, but never very deep, and always broad. The sixth ventral is said by Horn to be "deeply longitudinally sulcate at middle." This I find is not a constant character, only one specimen out of a series of six well-preserved males has a median sulcation and in this it extends obliquely, showing that this is due to shrinkage. (Plate 43, fig. 20.)

In *sirpata* female the fifth ventral is truncate, the sixth distinctly smaller (even at base) than the last dorsal; last dorsal more nearly semicircular than in var. *spatiosa*. (Plate 43, fig. 21.)

CYMATODERA SIRPATA, variety SPATIOSA, new variety.

Differs from the typical form as follows: Form broader, elytra more depressed, the intervals rather finely, moderately closely, irregularly punctate (a single row of rather coarser punctures in *sirpata*).

The sexual characters of the male and female are sufficiently distinct to render the separation of the variety easily possible.

Male.—Fifth ventral segment truncate; sixth short, rounded, as broad at base as last dorsal, very feebly, subtriangularly emarginate at apex; last dorsal longer than last ventral, semicircular, very feebly emarginate-truncate at tip. (Plate 43, fig. 22.)

Female.—Fifth ventral truncate; sixth large, nearly semicircular, broader at base and but little shorter than last dorsal; last dorsal broad, obtusely rounded at apex. (Plate 43, fig. 23.)

Type locality.—Texas.

Four paratypes.—Cat. No. 23123, U.S.N.M.

Described from five specimens, two males (one in my collection, No. 55) and three females. The males are without precise locality, being labeled "Tex.," at least one of them having been collected by Belfrage. One of the females is labeled "Tex.," collection J. B. Smith, and may have been collected by Schaupp. The other females are from San Diego, Texas, May 19, 1895 (E. A. Schwarz), and Victoria, Texas, May 25 (E. A. Schwarz).

CYMATODERA TUTA Wolcott.

San Simon, Arizona, July 5, 1897 (H. G. Hubbard); Oracle, Arizona, July 9, 1898 (Hubbard and Schwarz); San Augustine (near Las Cruces), New Mexico, August 28 (C. H. T. Townsend). Two males; one female.

CYMATODERA BICOLOR Say.

Mountain Lake, Virginia (H. Ulke); Afton, Virginia (Hubbard and Schwarz); Oakland, Maryland, July 11 (Hubbard and Schwarz); Plummer Island, Maryland, June 7, 1906; May 19, 1912 (Schwarz and Barber); Buffalo, New York (C. V. Riley); New York (J. B. Smith); Pennsylvania (Melsheimer in Hubbard and Schwarz collection); Detroit, Michigan, June (Hubbard and Schwarz); Michigan; Canada (J. B. Smith); Kansas.

In occasional specimens of this species, especially from Michigan, Canada, and the north, the prothorax is entirely black with the exception of the prosternum anterior to the coxae. Eight males; thirteen females; two with damaged abdomen.

CYMATODERA INORNATA Say.

Plummer Island, Maryland, July 12, 19, 1905 (D. H. Clemmens and E. A. Schwarz); Long Island, New York (M. L. Linell); Pennsylvania (J. B. Smith); Detroit, Michigan, June (Hubbard and Schwarz); Missouri (Barlow). Four males; six females; two indeterminate, abdomen defective.

CYMATODERA CALIFORNICA Horn.

Reddington, Arizona (W. Barnes); Los Angeles County, California (D. W. Coquillett); San Bernardino Mountains, California (C. C. Zeus); California (Belfrage). One male; four females.

CYMATODERA HORNI Wolcott.

Santa Catalina Mountains, Arizona. One female.

CYMATODERA KNAUSI, new species.

Moderately elongate, feebly shining, pale reddish brown, a narrow irregular rather indistinct median elytral fascia paler, moderately clothed with rather long erect, and semi-recumbent pale yellowish hairs. Antennae slender, longer than head and thorax; joint two slightly shorter than joint three; three to ten subequal in length, elongate, feebly serrate; eleventh one-half longer than the tenth. Head moderately densely not very coarsely punctate; eyes feebly prominent. Thorax subcylindrical, one-fourth longer than wide at apex; base slightly narrower than apex; sides feebly constricted subapically, more strongly compressed behind the middle; antescutellar impression distinct; surface moderately coarsely not densely punctate. Elytra three times as long as thorax, much wider at base than thorax at widest part; humeri distinct; sides nearly parallel; apices sinuate-truncate; disk convex; each elytron with ten rows of coarse quadrate punctures, the first lateral row extending to slightly behind the middle, the three sutural to the middle, the remaining rows longer and obliterated at apical fourth, the punctures

of apical portion fine and confused; intervals very feebly convex, narrower than the punctures, and finely irregularly punctulate. Meso- and metasternum with a few moderately coarse scattered punctures; abdomen finely rather densely punctate. Length, 8.2 mm.

Male.—Fifth ventral segment deeply, broadly arcuate-emarginate at apex; sixth ventral broader than long, sides feebly sinuate, the angles slightly produced, between which the apex is bisinuate-emarginate, longitudinally carinate at middle and at the sides, that of the middle extending to basal third, the lateral carinae nearly to the middle; fifth dorsal broadly and deeply incised at apex, narrower than corresponding ventral; last dorsal narrower and longer than last ventral, sides strongly oblique, rapidly narrowing to apex, the latter prolonged and strongly furcate at apex. (Plate 43, figs. 24, 25.)

Type locality.—Santa Rita Mountains, Arizona.

Type.—In author's collection, No. 1110.

Santa Rita Mountains, Arizona, 5,000–8,000 feet. Collected by Mr. E. G. Smyth and presented to me several years ago by Mr. Warren Knaus, to whom it gives me great pleasure to dedicate this very distinct species.

The very peculiar sexual characters separate this at once from any known species in our fauna. It is closest allied to *morosa*, from which it may be readily distinguished by the sinuate-truncate elytral apices as well as the unique sexual characters.

CYMATODERA MOROSA LeConte.

Oracle, Arizona, July 8 to 10, 1898 (Hubbard and Schwarz); Catalina Springs, Arizona, April 12, 1898 (Hubbard and Schwarz); Chiricahua Mountains, Arizona, June 1, 1897 (H. G. Hubbard); Pine Dale, Arizona, July 18; Williams, Arizona, July 1 (Schwarz and Barber); Chaves, New Mexico, June 8 (Townsend); Alameda County, California, August (A. Koebele).

CYMATODERA UMERINA Fall.

Los Angeles County, California (Coquillett); Tuscon, Arizona, July 21 (Hubbard and Schwarz); Fort Grant, Arizona, July 23, 1897 (H. G. Hubbard); Oracle, Arizona, July 30 in *Cylindropuntia*, July 6, 7, 12 (Hubbard and Schwarz); Winslow, Arizona, July 31, 1901 (Schwarz and Barber); Hot Springs, Arizona, June 25, 1901; Williams, Arizona, June 10–July 29, 1901 (Schwarz and Barber); Prescott, Arizona, June 19, 1901 (Schwarz and Barber); Mesilla, New Mexico, May 5 (Cockerell); Deming, New Mexico, July 22 (E. A. Schwarz). Seven males; twenty-five females.

CYMATODERA BELFRAGEI Horn.

Texas (Belfrage); San Antonio, Texas. Three females.

CYMATODERA LONGULA, new species.

Elongate, feebly shining, clothed with long coarse hairs; brown to piceous; antennae dark ferrugineous; labrum, tarsi, a narrow irregular median fascia and abdomen yellow. Head with front coarsely, densely punctate, vertex a little finer, occiput granulate; eyes feebly prominent; antennae slightly longer than head and thorax, joints two to ten subequal in length, joints five to ten feebly serrate, eleventh joint one-third longer than the tenth. Prothorax twice as long as wide, very feebly constricted both in front and behind the middle, base as wide as apex; ante-scutellar impression small but distinct with a feeble tubercle each side; surface very coarsely and densely punctate. Elytra nearly twice as wide as the thorax at base; humeri distinct; sides subparallel, very feebly divergent posteriorly, apices conjointly rounded; punctures coarse, deep, closely placed becoming finer and somewhat confused at apex; intervals flat, with an irregular row of moderate punctures, wider than the punctures near suture, narrower at the sides. Body beneath sparsely pubescent; metasternum very coarsely, sparsely punctate, the pubescence very long, recumbent; abdomen coarsely, moderately sparsely, not deeply punctate, second, third, and fourth ventral segments very finely and densely punctate. Legs sparsely but conspicuously clothed with long, coarse hairs. Length, 8-9 mm.

Male.—Fifth ventral segment deeply, broadly emarginate; sixth ventral wider and subequal in length to last dorsal, sides nearly straight, strongly narrowing to apex which is obtusely rounded with a small, deep emargination at middle; last dorsal truncate at apex, the angles rounded.

Female.—Unknown.

Type locality.—Catalina Springs, Arizona.

Type and paratype.—Cat. No. 23124, U.S.N.M.

Described from two males. The type from Catalina Springs (Gibbon's ranch, 13 miles northeast of Tucson, 2,800 feet altitude), Arizona, April 10, 1898 (Hubbard and Schwarz); the paratype from Santa Rita Mountains (Madera Cañon, 4,000-4,500 feet altitude), Arizona, June 8, 1898 (Hubbard and Schwarz).

The form is nearly that of *belfragei*. The distinctly granulate occiput, the prothorax equal at base and apex and the abdominal sexual characters of the male make this an easily recognizable species. In the type the suture is narrowly of a paler color than the general color; the base narrowly and irregularly, the apex rather obscurely, and the flanks before the fascia from the fifth stria to margin also somewhat pale. The paratype is similar to the type in all respects except that the entire side before the fascia is not paler than the general tone, the pale color being confined to the sixth, seventh, and eighth intervals.

CYMATODERA RUDIS, new species.

Form very similar to that of *ovipennis*, but a little more slender and the elytra somewhat wider at base. Subopaque, conspicuously clothed with long, coarse, pale yellowish hairs; pale brown to piceous brown, head, prothorax, and mesosternum darker, labrum, palpi, and antennae pale; elytra with a broad, vaguely limited, oblique median fascia yellowish-testaceous; abdomen yellow. Head coarsely very densely, front more finely very sparsely punctate; eyes moderately prominent; antennae very slightly longer than head and thorax, joints two to ten subequal in length, joints five to ten moderately serrate, joint eleven nearly one-half longer than joint ten, obtuse at apex. Prothorax twice as long as wide at apex, feebly constricted at apical third, rather strongly compressed behind the middle; base distinctly narrower than apex; ante-scutellar impression moderately distinct with surface broadly but feebly elevated each side; surface coarsely, deeply, densely punctate, more finely less deeply in apical third. Elytra at base less than one-half wider than thorax at apex; sides strongly divergent to about apical fourth; apices conjointly rounded; punctures coarse, rounded, perforate, closely placed, behind the median fascia suddenly becoming much finer and more distant extending without perceptible change in size to the extreme apex where they are somewhat confused; intervals much narrower than the punctures in basal half, wider in apical half, each with a single row of moderately fine punctures. Body beneath clothed with long coarse hairs; meso- and metasternum coarsely punctate, the former densely, the latter sparsely at sides but more finely and densely at middle; abdomen feebly, coarsely, sparsely punctate, the fourth and fifth segments very finely, very densely punctate and densely clothed with fine, short, yellowish pubescence. Legs conspicuously clothed with short and long coarse hairs. Length, 5-8 mm.

Male.—Fifth ventral segment broad, subparabolically emarginate; sixth ventral wider and subequal in length to last dorsal, obtusely rounded at apex, middle of the apex narrowly but distinctly emarginate; last dorsal elongate, obtusely rounded at apex.

Female.—Fifth ventral segment with a small distinct U-shaped emargination at apex; sixth ventral short, rounded, wider and but slightly shorter than last dorsal, the latter nearly semicircular.

Type locality.—Catalina Springs, Arizona.

Type, allotype, and five paratypes.—Cat. No. 23125, U.S.N.M.

Described from seven specimens from Catalina Springs (Gibbon's ranch, 2,800 feet altitude), Arizona, three males April 8, 22, 30 and four females April 7, 30, 1898 (Hubbard and Schwarz).

Very closely allied to the preceding species by the sexual characters of the abdomen in the male; there is, however, a slight but constant difference in the form of the last dorsal in the two species.

Longula is a larger, more parallel species, with nearly cylindrical prothorax, and there are several other differences, perhaps the most conspicuous of these being that in *rudis* the elytral punctures change abruptly in size at posterior edge of the fascia, while in *longula* there is no such sudden change, the large punctures continuing well toward the apices.

CYMATODERA COMANS Wolcott.

Mesilla Park, New Mexico (C. N. Ainslie); San Simon, Arizona, July 5, 1897 (H. G. Hubbard). One male; two females.

CYMATODERA FUSCULA LeConte.

Catalina Springs, Arizona, April 10, 12, 1898, on *Prosopis juliflora* (Hubbard and Schwarz); Tucson, Arizona, January 5 (H. G. Hubbard). One male; two females.

CYMATODERA FUSCULA, var. TEXANA Gorham.

Dimmit County, Texas (F. G. Schaupp); Burnett County, Texas (Schaupp); Texas (Belfrage). Two males; eight females; three indeterminate.

This variety only differs from the typical form by possessing a pale ante apical spot on each elytron.

CYMATODERA UNDULATA Say.

Plummer Island, Maryland, September 2, 1911 (in freshet drift), September 8, 1904, October 30, 1912 (Schwarz and Barber); Bladensburg, Maryland, August 10 (Hubbard and Schwarz); Washington, District of Columbia, August (Hubbard and Schwarz); New York (J. B. Smith); Marietta, Ohio (Hubbard and Schwarz); Ohio (Hubbard and Schwarz); Evansville, Indiana (H. Soltau); Middlesboro, Kentucky, August 28, 1904 (H. S. Barber); Kirkwood, Missouri, October 20, 1896 (bred from stems of *Bidens bipinnata*) (M. Murtfeldt); Missouri; Texas (Belfrage). Four males; eighteen females.

CYMATODERA CONFUSA, new species.

Color, markings, and general form similar to *balteata*, but with elytra much broader at base. Sparsely, finely pubescent; body winged. Head large, coarsely, closely, somewhat rugosely punctate; eyes moderately prominent; antennae extending to basal fifth of elytra, structure as in *balteata*. Prothorax twice as long as wide at apex, moderately constricted at apical third, rather strongly constricted behind the middle, narrower at base than apex; ante-scutellar impression distinct; surface coarsely, deeply punctate, slightly variable in regard to density but usually close, rarely sparse. Elytra one-third wider than prothorax at base, three times as long as wide at base; humeri distinct; sides subparallel, very slightly divergent posteriorly; apices separately rounded; rows of punctures coarse in

basal half, becoming finer posteriorly and obsolete at apical fourth, punctures separated by about half their own diameter; intervals flat, as wide or nearly as wide as the punctures, finely, irregularly, sparsely punctulate. Body beneath very finely, sparsely pubescent; mesosternum coarsely, not closely punctate; metasternum with a few moderately coarse, scattered punctures; abdomen with segments one to four coarsely punctate, closely at the sides, more sparsely at middle of first and second and finely and densely at middle of third and fourth segments, the fifth segment in its entire width finely and densely punctate. Legs moderately sparsely clothed with short fine yellowish pubescence. Length, 9.25–13.25 mm.

Male.—Fifth ventral segment parabolically emarginate; sixth ventral wider than long, the sides strongly sinuate, narrower at base than at apex, apex subtruncate, with a broad, deep U-shaped emargination, each apical angle of which is furnished with a long, dorsally reflexed tooth, middle deeply sulcate from emargination nearly to base. Last dorsal narrower but much longer than last ventral, sides subparallel but feebly sinuate, apex strongly sinuate, with a narrow but deep triangular emargination.

Female.—As in *balteata*.

Type locality.—North Carolina.

Three paratypes.—Cat. No. 23126, U.S.N.M.

Described from four specimens. The type, a male, from North Carolina (B. Gerhard), in my collection, No. 60; paratypes, a male from St. Louis, Missouri, May 11 (H. Soltau); a male from central Missouri, July (C. V. Riley); a female from Laredo, Texas, May 28 (E. A. Schwarz).

This species simulates *balteata* so closely that no doubt it stands in many collections as that species; it differs from that species by having the body fully winged and the elytra proportionately broader at base; the sexual characters of the male are also quite unlike those of *balteata*. The female is only separable by the fact that the wings are not aborted.

CYMATODERA, species.

Two females, one (No. 68) in my collection from Mississippi (R. J. Weith) and one in museum collection from Crescent City, Florida, are similar to the female of the preceding species, but differ somewhat in abdominal sexual characters; while these very probably represent a new species, I think it best to wait until male specimens of the form are at hand before publishing a description of this species.

CYMATODERA BALTEATA LeConte.

Brownsville, Texas, June 27 (C. H. T. Townsend); LaGrange, Texas, August 17 (E. A. Schwarz); Columbus, Texas, June 2 (E. A. Schwarz); San Antonio, June 23 (H. Soltau); Texas (J. B. Smith). Three males; five females.

CYMATODERA OVIPENNIS LeConte.

Los Gatos, California (A. Koebele); Martinez, California, December 2, 1882 (Turner); Sisson, California (A. Koebele); San Mateo County, California, August (A. Koebele); Lake Tahoe, California, July 14 (H. G. Hubbard); Los Angeles, California (Coquillett); Santa Cruz Mountains, California (A. Koebele); Placer County, California, September (A. Koebele); Siskiyou County, California (A. Koebele); Nevada County, California, September 14, 1885 (A. Koebele); Oregon (Hubbard and Schwarz). Six males; fifteen females.

CYMATODERA ANGUSTATA Spinola.

Los Angeles County, California (A. Koebele); Santa Cruz Mountains, California (A. Koebele); Hood River, Oregon, May 19 (Hubbard and Schwarz). Two males; three females.

PROVISIONAL TABLES OF THE NORTH AMERICAN SPECIES OF CYMATODERA GRAY.

Table of groups.

- Antennae with joints two, three, and four short, subequal, each shorter than any of the succeeding joints *Puncticollis* group, p. 284.
- Antennae with joints two and three equal, small, together distinctly shorter than joint four, usually about two-thirds length of joint four *Longicornis* group, p. 285.
- Antennae with joints two and three unequal, together as long as joint four. *Latefascia* group, p. 285.
- Antennae with joints two and three equal, together not, or but little, longer than joint four *Usta* group, p. 285.
- Antennae with joint two short, usually little if at all longer than half the length of joint three *Xanti* group, p. 286.
- Antennae with joints two to ten similar and nearly equal, joint eleven longer.
- Body winged, base of elytra broader than base of thorax.
- Last ventral segment in both sexes smaller than the last dorsal, and never deeply emarginate in the males *Bicolor* group, p. 286.
- Last ventral segment broader than the last dorsal, the sides of the former reflexed partly inclosing the latter.
- Elytral striae arranged in pairs, alternate intervals broader, sutural angle sometimes prolonged *Hopei* group, p. 286.
- Elytra striae equidistant *Knausi-morosa* group, p. 287.
- Last ventral segment broader than the last dorsal in the male, smaller than the last dorsal in the female *Confusa* group, p. 288.
- Body apterous, or at least with wings abortive; elytra at base little, or not at all, wider than the thorax *Angustata* group, p. 288.

SYNOPSIS OF GROUPS.

PUNCTICOLLIS group.

Elytral intervals with rows of long, erect or suberect, coarse hairs.

Intervals near suture equal to or narrower than the punctures; prothoracic puncturing sparse and fine.

Antennal joints subcylindrical, joints five to ten very feebly incrassate apically *puncticollis* Bland.

Antennal joints gradually incrassate apically, outer joints not at all triangular.

Elytral fascia narrow, angulate, narrower toward and interrupted at the suture.....*aegra* Wolcott.

Elytra fascia broad not at all narrowed or interrupted at the suture
delicatula Fall.

Antennal joints distinctly incrassate apically, outer joints slightly compressed and subtriangular.....*turbata* Horn.

Intervals near suture distinctly wider than the punctures.

Prothorax finely and sparsely punctate.

Elytra uniformly yellowish testaceous.....*pallida* Schaeffer.

Elytra pale yellowish, markings rather indistinct.....*subsmilis* Wolcott.

Elytra pale reddish brown with an ante-median fascia narrowly interrupted at the suture.....*mitis* Wolcott.

Prothorax coarsely punctate.

Elytra with a more or less complete pale fascia, prothorax closely punctate.....*decipiens* Fall.

Elytra uniformly dark brown, prothorax not very closely punctate
uniformis Schaeffer.

Elytral intervals with erect hairs short, inconspicuous, not or but little longer than remainder of pubescence.

Elytra uniformly dark brown.....*pubescens* Wolcott.

Elytra dark brown with an ante-median pale yellowish fascia always interrupted at the suture.....*schwarzi* Wolcott.

LONGICORNIS group.

Elytra brown sometimes testaceous in about basal half, head and thorax finely and sparsely punctate, ante-scutellar impression distinct.....*longicornis* LeConte.

Elytra uniformly brown, head and thorax coarsely and densely punctate.

Thorax one-half longer than wide, ante-scutellar impression wanting; antennal joints two and three obconical; punctures of first lateral stria extending nearly to apex, intervals slightly narrower than the punctures..*soror* Wolcott.

Thorax nearly twice as long as wide at apex, ante-scutellar impression present but feeble; antennal joints two and three conical; punctures of first lateral stria scarcely attaining the middle, intervals as wide as the punctures..*torosa* Wolcott.

LATEFASCIA group.

Elytra uniformly dark brown; metasternum densely, rather coarsely punctate
antennata Schaeffer.

Elytra testaceous, usually darker at base, a broad pitchy black fascia behind the middle; metasternum sparsely, rather coarsely, not deeply punctate
latefascia Schaeffer.

USTA group.

Size larger (8.5–9.5 mm.); antennae with joints two and three together slightly longer than joint four; elytra, legs and abdomen uniformly pale brown....*usta* LeConte.

Size smaller (5.8–6.2 mm.).

Robust; antennae with joints two and three together very slightly longer than joint four; ante-scutellar impression present but feeble; elytral punctures coarse, abruptly reduced in size behind the middle; intervals not wider than the punctures.....*mystica* Wolcott.

Slender; antennae with joints two and three together not longer than joint four; ante-scutellar impression wanting; elytral punctures fine, not abruptly reduced in size; intervals three times as wide as punctures.....*isabellae* Wolcott.

XANTI group.

Second joint of antennae equal to one-half the length of the third joint.

Form moderately robust, thoracic punctuation fine and sparse.

Elytra pale castaneous; thorax one-fourth longer than broad....*xanti* Horn.

Form slender, thoracic sculpture coarse.

Thorax longer than broad, ante-scutellar impression wanting; elytra brown with an oblique yellowish fascia at middle reaching the seventh striae, the sixth interval yellowish from the humerus to the fascia.

obliquefasciata Schaeffer.

Thorax nearly twice as long as wide, ante-scutellar impression feeble; elytra testaceous with piceous fasciae, intervals with a single row of fine punctures.....*sirpata* Horn.

Form slightly broader, the elytral intervals sparsely, irregularly punctate.....var. *spatiosa* Wolcott.

Second joint of antennae equal to two-thirds the length of third joint; thorax finely, sparsely punctate, sometimes nearly impunctate.

Front of head biimpressed; antennae with joints five to ten subequal in length, the outer joints slightly broader.

Thorax yellow, somewhat infusate at apex, finely, sparsely, but distinctly punctate; elytra parallel, pale yellowish with an irregular maculation or incomplete fascia at apical two-fifths fuscous, apex pale; antennae reaching basal fourth of elytra.....*tuta* Wolcott.

Thorax reddish brown, slightly infusate at sides, almost impunctate, the punctures evident at sides and apex, elytra yellowish with markings nearly as in *sirpata* but tips of elytra black; antennae scarcely longer than head and thorax.....*laevicollis* Schaeffer.

Front of head normal; antennae with joints five to ten gradually decreasing in length, equal in width, elytral markings unique.....*peninsularis* Schaeffer.

BICOLOR group.

Head finely and sparsely punctate.

Prothorax usually in part reddish yellow, rarely entirely black (the prosternum anterior to the coxae excepted); elytra black, rarely with an indistinct pale median fascia.....*bicolor* Say.

Head rather coarsely and densely punctate.

Elytra uniformly brown, legs paler, antennae ferruginous.....*inornata* Say.

Elytra piceous with humeral callus and a narrow very indistinct median fascia dull testaceous, legs bicolored, antennae brownish.....*aemula* Wolcott.

Elytra pale piceous with a median yellow band, the humeri testaceous, the callus piceous, legs testaceous, antennae ferruginous.....*fascifera* LeConte.

HOPEI group.

Prothorax one-fourth longer than wide; size smaller (9.5-12 5 mm.)

snowi Wolcott.

Prothorax very nearly twice as long as wide at base; size larger (19-23 mm.).

Elytra with a very broad median band and apex reddish yellow, the apex and band sometimes confluent at lateral and sutural margins, apex of elytra entire.

hopei Gray.

Elytra with a narrow median fascia yellow, apices piceous.

Last dorsal with median carina terminating abruptly (female) apices of elytra sinuate in both sexes, sutural angle sometimes prolonged. *californica* Horn.

Last dorsal with median carina terminating in an elevated posteriorly curving point; apices of elytra rounded (female). Male unknown.

horni Wolcott.

KNAUSI-MOROSA group.

Elytra sinuate-truncate at tip.....*knausi* Wolcott.

Elytra rounded at tip.

Legs brownish, piceous or black.

Body and legs rather sparsely pubescent.

Prothorax in part red, elytral fascia yellowish white, abdomen black.

tricolor Skinner.

Prothorax brown or piceous, sometimes slightly paler at apex and base.

Elytra with an indistinct, slightly *ante-median* fascia; ante-scutellar impression rather feeble.....*morosa* LeConte.

Elytra with a more or less distinct *median* fascia.

Prothorax shorter, nearly one-half longer than wide.

Fifth ventral feebly emarginate; sixth ventral oval, without distinct angles laterally, feebly emarginate at apex; last dorsal subtruncate at apex (male); last dorsal broadly triangularly emarginate at apex (female). Abdomen subrugosely punctate.....*cognata* Wolcott.

Fifth ventral segment deeply subparabolically emarginate; sixth ventral with prominent lateral angles, the points bent downward; last dorsal notched at middle of apex (male); last dorsal acutely notched at apex (female). Abdomen finely, sparsely punctate.....*umbrina* Fall.

Prothorax nearly twice as long as wide.

Slender, head coarsely punctate.....*aethiopa* Wolcott.

More robust, head more finely punctate.

santarosae Schaeffer.

Elytra with an irregularly angulate, narrow, median fascia yellow, below this and also near base and around humeri a few more or less distinct pale streaks.....*flavosignata* Schaeffer.

Elytra with a distinct, moderately broad, slightly *post-median* fascia; thorax rather finely and sparsely punctate at apical fourth, basal three-fourths very finely and sparsely punctate; ante-scutellar impression strong, the surface each side strongly elevated.

belfragei Horn.

Body and legs conspicuously clothed with long, coarse hairs.

Elongate; elytra nearly twice as wide as prothorax at base, sides nearly parallel; prothorax subcylindrical, as wide at base as at apex.

longula Wolcott.

Rather robust; elytra scarcely one-half wider at base than the prothorax, sides strongly divergent posteriorly; prothorax slender, base distinctly narrower than apex.....*rudis* Wolcott.

Legs pale testaceous.

Elytra dark with a pale median or post-median fascia sometimes indistinct.

Elytral fascia postmedian.....*punctata* LeConte.

Elytral fascia median.

Thorax and elytra coarsely punctate.

Elytral apices separately rounded; ante-scutellar impression wanting.....*fuchsii* Schaeffer.

Elytral apices conjointly rounded; ante-scutellar impression distinct.....*comans* Wolcott.

Thorax and elytra rather finely punctate.

Thorax elongate, elytral striae evident only at base; scutellum slightly emarginate at tip.....*oblita* Horn.

sixth ventral is very short and arcuately emarginate at apex in *soror*, in *antennata* the same segment is much longer and scarcely emarginate, the last dorsal is much longer and more broadly truncate than in *soror*.

Cymatodera brevicollis Shaeffer,² described from a single female specimen from Arizona, I have been unable to place in the table of species. It is unknown to me in nature, and the characters given in the original description give no hint as to what position it should be given. It closely resembles *ovipennis* LeConte, but can not be associated with that species as it is fully winged. Mr. Schaeffer gives as other distinguishing characters the longer antennal joints, shorter prothorax, and the more narrowly rounded apices of elytra. Mr. Shaeffer, in a letter, says that this species should be placed preceding the *angustata* group.

Cymatodera pilosella LeConte is merely a small form of *ovipennis* possessing no distinctive characters so far as I can perceive other than that of size. Hence it is not included in the table.

² Journ. N. Y. Ent. Soc., vol. 25, 1917, p. 130.

EXPLANATION OF PLATE 43.

- FIG. 1. *Cymatodera puncticollis* Bland. Ventral view of male fifth and sixth and apex of last dorsal segment.
2. *C. aegra* Wolcott. Ventral view of male same as in 1.
 3. *C. aegra* Wolcott. Ventral view of female; fifth and sixth and apex of last dorsal segment.
 4. *C. turbata* Horn. Ventral view of male same as 1.
 5. *C. turbata* Horn. Ventral view of female same as 3.
 6. *C. pallida* Schaeffer. Ventral view of male same as 1.
 7. *C. subsimilis* Wolcott. Ventral view of male same as 1.
 8. *C. mitis* Wolcott. Ventral view of female same as 3.
 9. *C. uniformis* Schaeffer. Ventral view of female same as 3.
 10. *C. pubescens* Wolcott. Ventral view of female same as 3.
 11. *C. schwarzi* Wolcott. Ventral view of male same as 1.
 12. *C. schwarzi* Wolcott. Ventral view of female same as 3.
 13. *C. longicornis* LeConte. Ventral view of male same as 1.
 14. *C. latefascia* Schaeffer. Ventral view of male same as 1.
 15. *C. latefascia* Schaeffer. Ventral view of female same as 3.
 16. *C. mystica* Wolcott. Ventral view of male same as 1.
 17. *C. mystica* Wolcott. Dorsal view of male fifth and sixth segments.
 18. *C. mystica* Wolcott. Ventral view of female same as 3.
 19. *C. mystica* Wolcott. Dorsal view of female fifth and sixth segments.
 20. *C. sirpata* Horn. Ventral view of male same as 1.
 21. *C. sirpata* Horn. Ventral view of female same as 3.
 22. *C. sirpata*, var. *spatiosa* Wolcott. Ventral view of male same as 1.
 23. *C. sirpata*, var. *spatiosa* Wolcott. Ventral view of female same as 3.
 24. *C. knausi* Wolcott. Ventral view of male same as 1.
 25. *C. knausi* Wolcott. Dorsal view of male apex of fifth, sixth, and portion of last dorsal segments.